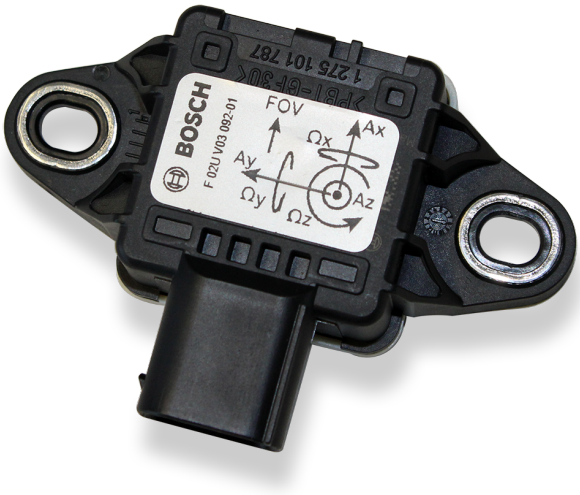
Inertial Measurement Unit MM7.10



- Application 1: ±163°/s (roll rate / pitch rate / yaw rate)
- Application 2: ±4.2 g (X, Y and Z acceleration)
- Weight w/o wire: 35 g
- Size: 80 x 56 x 23.3 mm
- Power supply: 8 to 16 V

The MM7.10 was designed to measure the physical effects of rotational and linear acceleration. In order to achieve this, the sensor includes MEMS measuring elements connected to an appropriate integrated circuit.
A rotational acceleration around the integrated sensing elements generates a Coriolis force, which changes the internal capacity of the micro machined sensing parts. Furthermore, a pure surface micro machined element is used to measure the vehicle linear acceleration in all 3 axis. This combination of rotational and linear acceleration sensors enables a precise measurement of the vehicle dynamics.
The main feature and benefit of this sensor is the combination of 3 linear and 3 rotational accelerometers and its high speed 1 Mbaud CAN-signal output.

Application

Application I	±163°/s (roll / pitch / yaw rate)
Application II	±4.2 g (X, Y and Z acceleration)
Operating temperature range	-20 to 85°C

Technical Specifications

Mechanical Data

Weight w/o wire	35 g
Size	80 x 56 x 23.3 mm

Electrical Data

Power supply	8 to 16 V
Max input current	100 mA at 7 V 50 mA at 14 V
CAN speed	1 Mbaud or 500 kbaud

CAN Message

CAN ID 01 0x174	
Byte	Value
0	Yaw rate
1	
2	Reserved
3	
4	Acc Y-axis
5	
6	Reserved
7	Unused

CAN ID 02 0x178	
Byte	Value
0	Roll rate
1	
2	Reserved
3	
4	Acc X-axis
5	
6	Reserved
7	Unused

CAN ID 03 0x17C	
Byte	Value
0	Pitch rate
1	

2	Reserved
3	
4	Acc Z-axis
5	
6	Reserved
7	Unused

Characteristic

Characteristic Application I	
Measuring range	± 163°/s
Over range limit	± 1,000°/s
Absolute physical resolution	0.1°/s
Cut-off frequency (-3 dB)	15 Hz; 30 Hz; 70 Hz
Characteristic Application II	
Measuring range	±4.2 g
Over range limit	±20 g
Absolute physical resolution	0.01 g
Cut-off frequency (-3 dB)	15 Hz; 30 Hz; 70 Hz

Connectors and Wires

Connector (1)	**AMP 114-18063-076**
Mating connector (1)	F02U.B00.435-01
Pin 1	Gnd
Pin 2	CANL
Pin 3	CANH
Pin 4	UBat
Connector (2)	**ASL606-05PC-HE**
Mating connector (2)	ASL006-05SC-HE
Pin 1	UBat
Pin 2	Gnd
Pin 3	CANH
Pin 4	CANL
Pin 5	Not connected
Sleeve	DR-25
Wire with open end (3)	
Red wire	UBat
Blue wire	Gnd
White wire, shielded	CANH
Light Blue wire, shielded	CANL
Wire size with open end	2 x AWG22 (UBat, Gnd) 2 x AWG24 (CAN)
Wire length L	15 to 100 cm

CAN Parameters

Byte order	LSB (Intel)
CAN speed	1 Mbaud or 500 kbaud
Bit mask	unsigned
Offset (all signals)	0x8000 hex
Quantization Roll Rate	0.005 [°/s/digit]
Quantization Pitch Rate	0.005 [°/s/digit]
Quantization Yaw Rate	0.005 [°/s/digit]
Quantization Acc X-axis	0.0001274 [g/digit]
Quantization Acc Y-axis	0.0001274 [g/digit]
Quantization Acc Z-axis	0.0001274 [g/digit]

Installation Notes

Mounting position: The MM7.10 must not be mounted with connector pointing upwards. Other than this, Bosch has no restrictions for the mounting orientation. We recommend aligning the unit coordinate system to the vehicle coordinate system as this is the orientation that most systems will require and thus no mathematical transformation is needed.

The MM7.10 can be connected directly to most control units and data logging systems.

Avoid abrupt temperature changes.

For mounting, use only the integrated fixing holes.

Ensure that the environmental conditions do not exceed the sensor specifications.

You will find further application hints in the offer drawing at our homepage and calibration sheet.

Deliver the calibration sheet with your order placement.

Note: CAN ID 04 0x7DC, RX1 0x7DF and RX2 0x7D4 are used for configuration of the sensor (SYNC). Make sure that the CAN ID 04 0x7DC, RX1 0x7DF and RX2 0x7D4 are not used in your CAN network by any other device.

CAN DBC file on request

Standards considered on request

Safety Note

The sensor is not intended to be used for safety related applications without appropriate measures for signal validation in the application system.

Legal Restrictions

Generally blocked are direct and indirect business involving high risk destinations, including Russia, Belarus, Cuba, Iran, North Korea, Syria, Libya, Afghanistan, and certain non-governmental controlled Ukrainian regions. This list may change as geopolitics evolve.

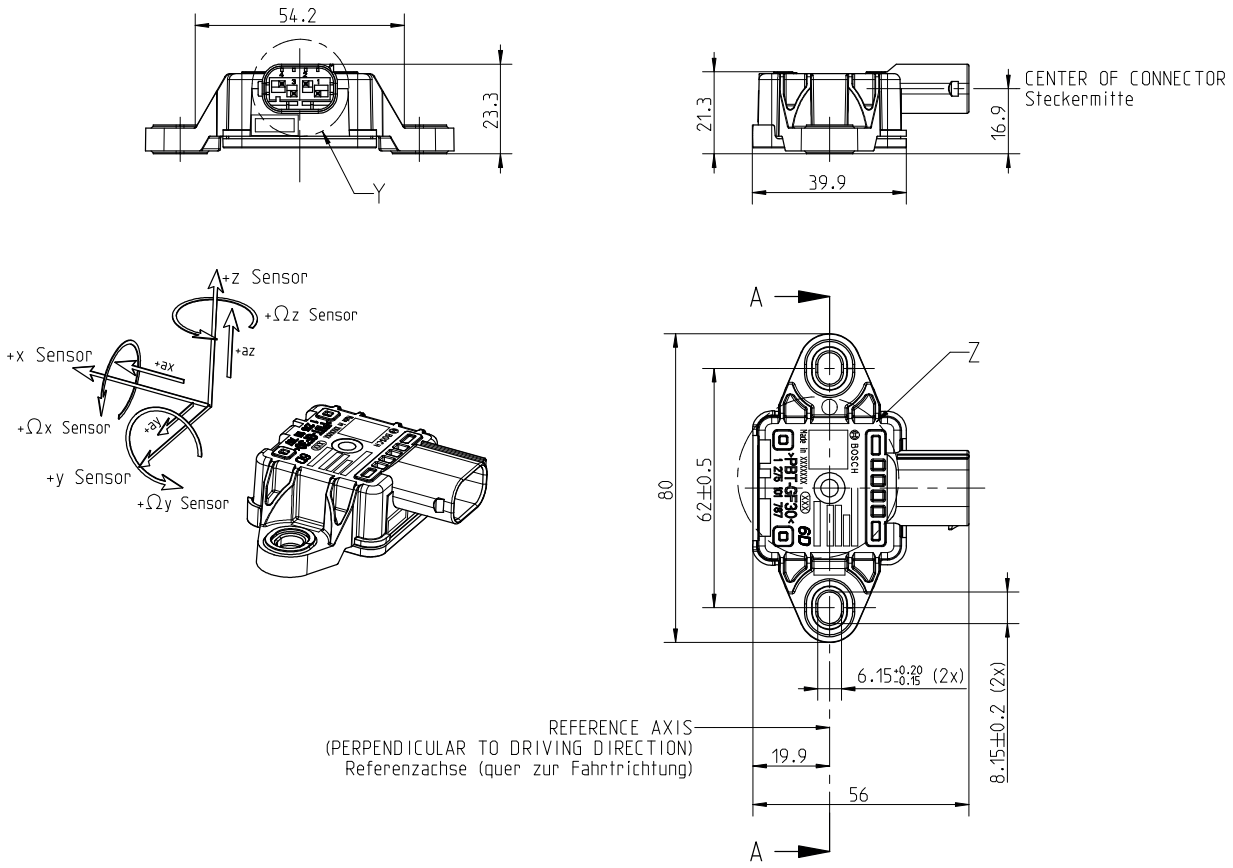
Ordering Information

Inertial Measurement Unit MM7.10
Sensor with production type connector (1)
Order number **F02U.V03.092-01**

Inertial Measurement Unit MM7.10
Wire with motorsport connector (2)
Order number **F02U.V03.092-02**

Inertial Measurement Unit MM7.10
Wire with open end (3)
Order number **F02U.V03.092-90**

Dimensions



Represented by:

Europe:
Bosch Engineering GmbH
Motorsport
Robert-Bosch-Allee 1
74232 Abstatt
Germany
motorsport@bosch.com
www.bosch-motorsport.de

North America:
Bosch Engineering North America
Motorsport
38000 Hills Tech Drive
Farmington Hills, MI 48331-3417
United States of America
motorsport@bosch.com
www.bosch-motorsport.com

Asia-Pacific:
Bosch Engineering Japan K.K.
Motorsports Department
1-9-32 Nakagawachuo, Tsuzuki-ku
Yokohama-shi
Kanagawa, 224-8601
Japan
motorsport@jp.bosch.com
www.bosch-motorsport.jp

Australia, New Zealand and South Africa:
Robert Bosch Pty. Ltd
Motorsport
1555 Centre Road
Clayton, Victoria, 3168
Australia
motor.sport@au.bosch.com
www.bosch-motorsport.com.au

© Bosch Engineering GmbH 2026 | Data subject to change without notice
245667595 | en, , 23. Feb 2026